

REMARKS/ARGUMENTS

Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter which Applicants regard as the invention.

Claims 8, 9, and 14-17 were rejected under 35 U.S.C. 102(e) over U.S. Published Patent Application No. 2003/0097971 A1 to Takahashi. Claims 8, 9 and 14-17 been amended to more clearly describe what applicant considers the invention. Thus, for the following reasons, the rejections have been rendered moot.

Regarding claims 8, 9 and 14-17, Takahashi 97971 does not teach "*exerting inertial force on the gas bubbles at the negative region in a direction so as to detach the bubbles from a gas/liquid interface by providing the gas/liquid interface at a smoothly curved water passage,*" as required. In the claimed invention, as shown and described by way of example in Fig. 10B and on page 27, air molecules traveling downward through the upper, vertically oriented portion of the fluid passage (21) have inertia as they move towards the gas/liquid interface (43). Since the lower portion of the fluid passage (21) is smoothly curved in a downward direction at the gas/liquid interface (43), some of this downward inertia is preserved as the air moves through the interface (43), helping the bubbles to detach from the interface (43).

In Fig. 4 of Takahashi 97971, air travels downward through a vertically oriented pipe space (AR2), through a chamber space (AR1), to an elongated hole (BH1), communicating with a horizontal passage (WR). The passage (WR) is formed between the shell plating (101) of the ship (X) and a guiding fin (120) of a guiding portion (102) (see ¶ [0052], lines 1-4). It is clear from Takahashi 97971 that the passage (WR) is straight, not downwardly curved, as it passes along the hole (BH1) since the guiding fin (120) is spaced at its smallest distance (a constant distance) from the shell plating (101) for a length (L1) that is substantially equal to or longer than the length (L2) of the hole (BH1) (see ¶ [0050],

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lines 11-16; see also ¶ [0052], lines 7-15, describing the shape of the passage (WR)). Regardless of any curves in the passage (WR) in other places, since the passage (WR) is straight where it communicates with the hole (BH1), the shape of the passage does not preserve the inertia of the air for detaching bubbles, as in the presently claimed invention. Therefore, since every limitation is not taught by the reference, claims 8, 9 and 14-17 are patentable over Takahashi 97971.

Claims 8-11 and 14-18 were rejected under 35 U.S.C. 102(e) over U.S. Published Patent Application No. 2001/0022152 to Takahashi. As explained above, claims 8, 9 and 14-17 have been amended to more clearly describe what applicant considers the invention.

Regarding claims 8, 9 and 14-17, Takahashi 22152 does not teach “exerting inertial force on the gas bubbles at the negative region in a direction so as to detach the bubbles from a gas/liquid interface by providing the gas/liquid interface at a *smoothly curved water passage*,” as required. As explained above, in the disclosed embodiment of the presently claimed invention, the lower portion of the fluid passage (21) is smoothly curved in a downward direction at the gas/liquid interface (43) to preserve inertia of air moving through the interface (43) that helps the bubbles to detach from the interface (43).

In Figs. 14A-16 of Takahashi 22152, a vertically adjustable wing body (422) is provided within an indentation (420). As shown in Fig. 15A, when the vessel reaches a prescribed velocity, the wing body (422) is moved downward so that the wing (438) is positioned at a prescribed height from the hull shell plate (62) of the vessel. In order to provide a locally negative pressure relative to the atmosphere for drawing the air down into a water channel (439), the prescribed height must provide a level difference between the hull shell plate (62) and the inclined surface (435a) of the wing body (422), creating a separation region. (See ¶¶ [0199] & [0200].) As a result of this level difference, the water channel (439) abruptly changes direction at each end of the inclined surface (435a), not being *smoothly* curved as presently claimed. Therefore, since every limitation is not taught by the reference, claims 8, 9 and 14-17 and their respective dependent claims 10, 11 and 18 are patentable over Takahashi 22152.

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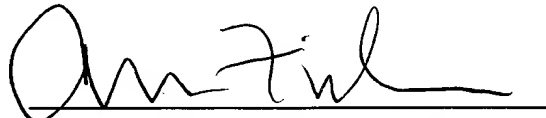
In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 33463.

Respectfully submitted,

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